

VASCULAR FLORA OF EUCLA NATIONAL PARK

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ABSTRACT

Eucla National Park contains a vascular plant flora of at least 170 taxa, of which 137 are native species and 33 are naturalised aliens. The park preserves a representative sample of the flora of the southern Nullarbor. It is significant in containing the eastern-most component of the Roe Plains and the western limit of the Bunda Cliffs. The park is the only known conservation reserve containing the local endemic, *Senecio euclaensis*.

INTRODUCTION

Eucla National Park, reserve number 36205, is a small national park of 3,341 hectares immediately south and east of Eucla to the Western Australian/South Australian border. The park was created to preserve the remains of Eucla telegraph station.

Since a major biological survey was undertaken on the Nullarbor Plain in 1984 (McKenzie and Robinson 1987), little has been written on the flora of this region and the flora of this remote park has never previously been reported.

SURVEY METHOD

Survey work in Eucla National Park was performed during sup-

plementary trips to the Nullarbor in 1986 and completed in 2009. Systematic plant collections and listings per major habitat were made during vehicle and foot traverse at various times of the year, during the survey period. Voucher collections are deposited in PERTH.

GEOMORPHOLOGY, VEGETATION AND SOILS

Eucla National Park is in the coastal belt of the Eucla Basin (Nullarbor Plain) which has a winter rainfall semi-arid climate. Eucla townsite immediately north of the park receives an average rainfall of 257 mm. Compared to this the interior of the Nullarbor has an arid climate

with a uniform rainfall distribution throughout the year.

The Park contains a sample of the eastern end of the Roe Plain where this meets the Hampton Range and the Bunda Cliffs near Wilson's Bluff. Marine dunes (Delisser sand patch) have buried parts of the Hampton Range within the park, these dunes have increased in size and mobility since Rabbits invaded the Nullarbor.

These geomorphologies have very different soil and plant communities. The Hampton Range has low mixed mallee of *Eucalyptus oleosa* and *Eucalyptus yalatensis*. The Bunda Cliffs has a low wind pruned heath of *Melaleuca lanceolata*/*Melaleuca quadrifaria*. The Roe Plains supports either coastal strand plants on beach dunes, un-vegetated dunes, grassland of *Spinifex hirsutus* with scattered shrubs on stable dunes, or rarely below the Hampton Range *Acacia papyrocarpa* low woodland.

FLORA

NATIVE FLORA

Eucla National Park contains a vascular flora of at least 170 taxa. These species are listed in Table 1 under the geomorphologies/vegetation associations where they occur (Hampton Range, Bunda Cliffs, Beach, Roe Plain) with an additional column for highly disturbed areas. Of the 170 taxa, 137 are natives and 33 are weeds. One taxon is a non-flowering plant, 21 are

Monocotyledons (11 natives and 10 weeds) and 148 are Dicotyledons (125 natives and 23 weeds).

The Asteraceae (25 natives, 7 weeds), Chenopodiaceae (26 natives, 1 weed), Poaceae (9 natives, 9 weeds), Myrtaceae (6 natives), Mimosaceae (6 natives), Aizoaceae (6 natives, 1 weed) and Brassicaceae (5 natives, 7 weeds) are the most species rich families. These are the typical species diverse families of the calcareous soils of the Nullarbor Region.

This is a large sample of the flora of the total Nullarbor region which was listed as 297 species in Keighery *et al.* (1987) for a small park. It considerably exceeds the 105 taxa collected over several seasons in the central Nullarbor around Forest by Johnson and Baird (1970). This richness reflects the milder climate along the Nullarbor coast and the presence of more diverse soils, including coastal siliceous sands.

No declared rare or priority flora (Atkins 2008) have been recorded from the park. The park contains a suite of species that are confined to the Bunda cliffs and Hampton escarpment, including *Correa backhousiana* var *coriacea*, *Stenopetalum saxatile* and *Senecio euclaensis*. The latter only described in 2004 is locally endemic to this area of the Nullarbor and the park is the only known conservation reserve containing populations of this species. An apparently new species of *Olearia* (voucher GK 17689) was located in 2009,

Table 1. Flora of Eucla National Park.

Key

Column 1	Family group (listed alphabetically)
Column 2	Plant Taxa (species, sub-species and varieties) (listed alphabetically in family groups which are also listed alphabetically) * Weed species
Column 3-7	Vegetation/Landform Unit
Ha	= Hampton Range
B	= Bunda Cliffs
BC	= Beach.
Ro	= Roe Plains
DI	= Disturbed areas

Family	Plant Taxa	Ha	B	BC	Ro	DI
Aizoaceae						
	<i>Carpobrotus modestus</i>	•	•			
	<i>Carpobrotus virescens</i>			•	•	
	<i>Dysphyma crassifolium</i> subsp. <i>clavellatum</i>	•			•	
	<i>Gunniopsis calcarea</i>	•				
	* <i>Mesembryanthemum crystallinum</i>		•			
	<i>Tetragonia eremaea</i>	•				
	<i>Tetragonia implexicoma</i>	•	•	•	•	
Amaranthaceae						
	<i>Ptilotus obovatus</i>	•	•			
	<i>Ptilotus symonii</i>	•	•			
Anthericaceae						
	<i>Tricoryne tenella</i>	•	•			
Apiaceae						
	<i>Apium annuum</i>	•	•		•	
	<i>Daucus glochidiatus</i>	•		•	•	
Aspleniaceae						
	<i>Pleurosorus rutifolius</i>	•	•			
Asphodeleaceae						
	* <i>Asphodelus fistulosus</i>			•		•
Asteraceae						
	<i>Actites megalocarpa</i>			•	•	
	* <i>Arctotheca calendula</i>	•	•		•	
	* <i>Arctotheca populifolia</i>			•		
	<i>Angianthus conocephalus</i>	•	•			

Table 1 (cont.)

Family	Plant Taxa	Ha	B	BC	Ro	DI
	<i>Blennospora drummondii</i>		•	•		
	<i>Brachyscome ciliaris</i>	•	•		•	
	<i>Brachyscome lineariloba</i>	•	•			
	<i>Calocephalus brownii</i>			•	•	
	<i>Calotis hispidula</i>	•	•			
	<i>Calotis multicaulis</i>	•	•			
*	<i>Centaurea melitensis</i>	•			•	•
	<i>Cratystylis conocephala</i>	•			•	
*	<i>Dittrichia graveolens</i>				•	•
	<i>Gnaphalium indutum</i>		•			
	<i>Isoetopsis graminifolia</i>	•	•			
	<i>Olearia axillaris</i>		•	•		
	<i>Olearia dampieri</i> subsp. <i>eremicola</i>	•			•	
	<i>Olearia exiguifolia</i>	•				
	<i>Olearia muelleri</i>	•				
	<i>Olearia</i> sp. (GK 17689)		•			
*	<i>Oligocarpus calendulaceus</i>	•				
	<i>Podolepis rugata</i>	•	•			
*	<i>Reichardia tingitana</i>				•	•
	<i>Rhodanthe haigii</i>	•	•			
	<i>Rhodanthe stricta</i>	•	•			
	<i>Senecio euclaensis</i>		•			
	<i>Senecio glossanthus</i>	•	•	•		
	<i>Senecio lacustrinus</i>			•		
	<i>Siloxerus multiflorus</i>					
*	<i>Sonchus oleraceus</i>	•	•		•	•
	<i>Trichanthodium skiirophorum</i>	•	•			
	<i>Vittadinia nullarborensis</i>	•	•			
Boraginaceae						
	<i>Halgania andromedifolia</i>	•	•			
	<i>Ompholappula concava</i>	•	•			
Brassicaceae						
*	<i>Brassica tournefortii</i>		•		•	•
*	<i>Cakile edentula</i>			•	•	
*	<i>Cakile maritima</i>				•	•
*	<i>Carrichtera annua</i>	•	•		•	•
*	<i>Horungia procumbens</i>				•	
	<i>Lepidium pseudoruderale</i>		•			
	<i>Lepidium rotundum</i>	•	•		•	
	<i>Phlegmatospermum cochlearinum</i>	•	•			
*	<i>Sisymbrium irio</i>		•		•	•
*	<i>Sisymbrium orientale</i>		•		•	•
	<i>Stenopetalum lineare</i>	•	•		•	
	<i>Stenopetalum saxatile</i>		•			

Table 1 (cont.)

Family	Plant Taxa	Ha	B	BC	Ro	DI
Caryophyllaceae						
	* <i>Cerastium glomeratum</i>				•	•
Caesalpinaceae						
	<i>Senna artemisioides</i> subsp. <i>x sturtii</i>	•				
	<i>Senna artemisioides</i> subsp. <i>filifolia</i>	•				
Casuarinaceae						
	<i>Allocasuarina helmsii</i>	•	•			
Chenopodiaceae						
	<i>Atriplex acutibractea</i> subsp. <i>acutibractea</i>	•	•		•	
	<i>Atriplex cinerea</i>			•	•	
	<i>Atriplex nummularia</i> subsp. <i>spathulata</i>	•			•	
	<i>Atriplex paludosa</i> subsp. <i>cordata</i>				•	
	<i>Atriplex vesicaria</i> subsp. <i>appendiculata</i>	•	•		•	
	<i>Chenopodium curvispicatum</i>	•			•	
	* <i>Chenopodium murale</i>				•	•
	<i>Enchylaena tomentosa</i>	•	•		•	
	<i>Eriochiton sclerolaenoides</i>	•	•			
	<i>Maireana erioclada</i>	•	•		•	
	<i>Maireana lobiflora</i>	•	•		•	
	<i>Maireana oppositifolia</i>	•	•		•	
	<i>Maireana radiata</i>	•	•		•	
	<i>Maireana sedifolia</i>	•				
	<i>Maireana trichoptera</i>	•	•		•	
	<i>Maireana turbinata</i>				•	
	<i>Rhagodia crassifolia</i>	•	•		•	
	<i>Rhagodia spinescens</i>	•				
	<i>Salsola australis</i>			•		
	<i>Sarcocornia quinqueflora</i>				•	
	<i>Sclerolaena brevifolia</i>	•		•		
	<i>Sclerolaena diacantha</i>	•		•		
	<i>Sclerolaena obliquicuspis</i>	•	•			
	<i>Sclerolaena patenticuspis</i>	•	•			
	<i>Sclerolaena uniflora</i>	•	•			
	<i>Tecticornia disarticulata</i>				•	
	<i>Threlkeldia diffusa</i>	•	•		•	
Colchicaceae						
	<i>Wurmbea tenella</i>		•			
Convolvulaceae						
	<i>Convolvulus remotus</i>		•			
	<i>Wilsonia humilis</i>		•	•		

Table 1 (cont.)

Family	Plant Taxa	Ha	B	BC	Ro	DI
Crassulaceae						
	<i>Crassula colligata</i> ssp. <i>lamprosperma</i>		•			
	<i>Crassula exserta</i>		•		•	
Cuscutaceae						
	<i>Cuscuta ?epithymum</i>			•		
Epacridaceae						
	<i>Acrotriche patula</i>	•	•			
Euphorbiaceae						
	<i>Beyeria lechenaultii</i>	•	•			
	<i>Euphorbia drummondii</i>	•	•			
	* <i>Euphorbia paralias</i>			•	•	
Frankeniaceae						
	<i>Frankenia eremophila</i>	•				
	<i>Frankenia pauciflora</i>			•		
	<i>Frankenia sessilis</i> var <i>sessilis</i>	•	•		•	
Geraniaceae						
	* <i>Erodium cicutarium</i>	•	•			•
	<i>Erodium cygnorum</i>		•			
Goodeniaceae						
	<i>Goodenia varia</i>		•			
	<i>Scaevola myrtifolia</i>	•	•			
	<i>Scaevola spinescens</i>	•		•		
Juncaginaceae						
	<i>Triglochin trichophora</i>		•			
Lamiaceae						
	<i>Prostanthera serpyllifolia</i> subsp. <i>microphylla</i>		•			
	<i>Westringia rigida</i>	•	•			
Lauraceae						
	<i>Cassytha melantha</i>	•				
Loranthaceae						
	<i>Amyema melaleuca</i>		•			
	<i>Amyema miquelii</i>	•				
	<i>Lysiana exocarpi</i> subsp. <i>exocarpi</i>	•				
Malvaceae						
	<i>Lawrenzia glomerata</i>		•		•	
	<i>Lawrenzia squamata</i>				•	
	<i>Sida corrugata</i>	•				

Table 1 (cont.)

Family	Plant Taxa	Ha	B	BC	Ro	DI
Mimosaceae						
	<i>Acacia erinacea</i>	•				
	<i>Acacia gonophylla</i>	•				
	<i>Acacia hakeoides</i>	•	•			
	<i>Acacia mutabilis</i> subsp. <i>angustifolia</i>	•			•	
	<i>Acacia oswaldii</i>		•		•	
	<i>Acacia papyrocarpa</i>	•			•	
Myoporaceae						
	<i>Eremophila alternifolia</i>	•				
	<i>Eremophila deserti</i>	•	•			
	<i>Eremophila glabra</i>		•	•		
	<i>Eremophila scoparia</i>	•				
	<i>Eremophila weldii</i>	•	•			
Myrtaceae						
	<i>Eucalyptus oleosa</i> subsp. <i>ampliata</i>	•				
	<i>Eucalyptus pileata</i>	•				
	<i>Eucalyptus pleurocarpa</i>	•				
	<i>Eucalyptus yalatensis</i>	•				
	<i>Melaeuca lanceolata</i>	•	•		•	
	<i>Melaeuca quadrifaria</i>	•				
Nitrariaceae						
	<i>Nitraria billardierei</i>	•	•			
Orobanchaceae						
	* <i>Orobanche minor</i>					•
Oxalidaceae						
	<i>Oxalis perennans</i>	•	•			
Papilionaceae						
	* <i>Medicago truncatula</i>					•
	<i>Pultenaea elasticha</i>	•				
	<i>Swainsona oliveri</i>	•				
	<i>Templetonia batti</i>	•	•			
	<i>Templetonia retusa</i>	•				
Phormiaceae						
	<i>Dianella revoluta</i>	•	•		•	
Pittosporaceae						
	<i>Pittosporum angustifolium</i>	•	•			
Plantaginaceae						
	<i>Plantago drummondii</i>	•	•			

Table 1 (cont.)

Family	Plant Taxa	Ha	B	BC	Ro	DI
Poaceae						
	* <i>Aira cupaniana</i>				•	•
	<i>Aristida contorta</i>		•		•	
	<i>Austrodanthonia caespitosa</i>	•	•			
	<i>Austrostipa drummondii</i>	•	•			
	<i>Austrostipa nullarborensis</i>	•	•			
	<i>Austrostipa platychaeta</i>	•	•		•	
	<i>Austrostipa velutina</i>		•			
	* <i>Avena barbata</i>				•	•
	<i>Bromus arenarius</i>			•	•	
	* <i>Bromus rubens</i>		•			
	* <i>Cynodon dactylon</i>				•	•
	* <i>Ehrharta longiflora</i>		•		•	•
	* <i>Hordeum leporinum</i>	•			•	
	* <i>Poa annua</i>		•			
	<i>Poa drummondiana</i>		•			
	* <i>Rostraria pumila</i>	•	•		•	
	* <i>Schismus barbatus</i>				•	
	<i>Spinifex hirsutus</i>			•	•	
Polygalaceae						
	<i>Comesperma volubile</i>	•	•			
Polygonaceae						
	<i>Muehlenbeckia adpressa</i>	•	•			
Portulacaceae						
	<i>Calandrinia</i> sp (GK/JJA s.n.)	•	•			
Primulaceae						
	* <i>Anagallis arvensis</i>	•	•		•	•
Rhamnaceae						
	<i>Pomaderris forrestiana</i>	•	•			
Rubiaceae						
	<i>Galium leptogonium</i>	•	•			
Rutaceae						
	<i>Correa backhouseana</i> var. <i>coriacea</i>		•			
	<i>Geijera linearifolia</i>	•				
Santalaceae						
	<i>Exocarpos aphyllus</i>	•	•	•		
	<i>Leptomeria pachyclada</i>		•			
	<i>Santalum acuminatum</i>	•	•	•		

Table 1 (cont.)

Family	Plant Taxa	Ha	B	BC	Ro	DI
Sapindaceae						
	<i>Alectryon oleifolius</i> subsp. <i>canescens</i>	•				
	<i>Dodonaea stenozyga</i>	•	•			
Solanaceae						
	<i>Lycium australe</i>			•	•	
	* <i>Lycium ferocissimum</i>			•	•	•
	<i>Nicotiana goodspeedii</i>	•	•	•		
	* <i>Solanum nigrum</i>	•	•	•	•	•
	<i>Solanum symonii</i>	•			•	
Thymelaeaceae						
	<i>Pimelea microcephala</i> subsp. <i>microcephala</i>	•				
Urticaceae						
	<i>Parietaria debilis</i>	•	•	•		
Zygophyllaceae						
	<i>Zygophyllum apiculatum</i>	•	•			
	<i>Zygophyllum billardierei</i>		•	•	•	
	<i>Zygophyllum eremaeum</i>		•		•	
	<i>Zygophyllum glaucum</i>	•	•			
	<i>Zygophyllum ovatum</i>	•	•			

however, its range and status are still to be determined.

WEEDS

Eucla National Park had a large number of weeds recorded compared to the 56 listed for the entire Nullarbor region in Keighery *et al.* (1987). Recent surveys have considerably increased this number to 99 (Keighery 2010) for the Western Nullarbor, however, the park still contains a large number and high proportion of weeds. This is the result of past and continuing disturbance. Eucla National Park is adjacent to the ruins of the Eucla Telegraph Station, where

numerous gardens, horse breeding and other general grazing occurred over many years. The park also currently abuts Eucla, the only major settlement remaining on the southern Nullarbor, where gardens are established and the Eyre Highway, the major transport route of the region.

Given a history of disturbance within and adjacent to the park, it is perhaps not surprising that a larger number of weeds than could be expected for a remote region have been located in the park. The findings of the recent weed survey also suggest that the highway and town are

continuing sources of weeds for the Park.

Significant weeds present in the Park (and Eucla) include Boxthorn (*Lycium ferocissimum*) and False Sow Thistle (*Reichardia tingitana*) on the Roe Plain; Prickly Turnip (*Brassica tournefortii*), Annual Veldt Grass (*Ehrharta longiflora*) and perhaps Stinkweed (*Dittrichia graveolens*) on the Bunda Cliffs and Wards Weed (*Carrichtera annua*) on the Hampton Range. From the occurrence of these and other weeds in Eucla, weed control in the Park would need to occur also in and around the settlement to be effective.

DISCUSSION

The park preserves a representative sample of the eastern southern Nullarbor flora including beaches, and flats of the Roe Plains and the only portion of the Bunda Cliffs in Western Australia. In this it complements Nutystland Nature Reserve, which contains the western portion of the Roe Plains and the Hampton Escarpment.

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